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3,718,596. Generally, the viscosity index improver is of high molecular weight, having a number average molecular weight of between about 50,000 and about 100,000 and a weight average molecular weight of between about 200,000 and about 300,000. Preferably, the viscosity index improver of the invention has a relatively narrow range of molecular weight, approximately 95% by weight of the viscosity index improver component having a molecular weight of between about 50,000 and about 1,500,000. This result is achieved in part by utilization of predominantly butyl and hexyl methacrylate esters.

The '596 patent discloses at col. 3, line 64 through col. 4, line 28 the particular type of viscosity index improver. The '596 patent teaches that the polymeric viscosity improvers are the polymers of alkyl esters of α,β -unsaturated monocarboxylic acids having a specified formula wherein the ester alkyl group has from 1-24 carbon atoms. The '596 patent further teaches (see col. 3, lines 48-53) that a preferred embodiment comprises a mixture of poly(butylmethacrylate) and poly(n-hexylmethacrylate). Support for the amendment to part (c) can be found in the U.S. 5,464,551 patent specification at least at col. 9, lines 1-5, which references U.S. Patent No. 3,679,587 as more fully describing the anti-erosion additives of the invention. The '587 patent discloses at col. 3, lines 11-29 that the alkyl substituent of the perfluoroalkyl sulfonic acid salt is preferably 5 to 12 carbon atoms. No new matter is contained in newly added claims 105 and 106. Claims 90-106 are currently in the application for examination.

37 C.F.R. 1.178 – Original Patent:

Applicant respectfully submits that U.S. Patent No. 5,464,551 ("the '551 patent") was previously surrendered in conjunction with the allowance and issuance of the parent reissue application serial no. 08/966,425, now Reissue Patent No. RE37,101 E (See attached **Exhibit A**, which is a copy of the Transmittal Letter, Statement under 37 C.F.R. 3.73(b), and stamped postcard showing submission of the original '551 patent). The present application is a continuation of the parent reissue application and, as such, the original patent of the present application has already been surrendered. Therefore, Applicant respectfully submits that they have complied with 37 C.F.R. 1.178 and that no

further action is required to be taken by Applicant since the '551 patent has already been surrendered.

Maintenance Fees:

Claims 90-104 were rejected under 35 U.S.C. 251 for lacking basis for reissue because by statute a reissue application can only be granted for the unexpired portion of the term of the original patent. It is unclear to Applicant why the Examiner has made this rejection. Applicant respectfully submits that this rejection is moot as the first maintenance fee for the '551 patent was timely paid and the second maintenance fee is not due until 2003.

Applicant respectfully requests that this rejection of claims 90-104 under 35 U.S.C. 251 be withdrawn.

Assignee's Ownership Interest under 37 C.F.R. 1.172(a)/

Assignee's Assent under 37 C.F.R. 3.73:

The Examiner has objected to the application under 37 C.F.R. 1.172(a) on the basis that Applicant has not established its ownership interest in the patent for which reissue is being requested.

Applicant hereby submits the "Assignees Assent to Filing Reissue Pursuant to 37 C.F.R. 1.172 and Offer to Surrender Original Letters Patent Pursuant to 37 C.F.R. 1.178", signed by Mark F. Wachter, Esq. on behalf of current assignee Solutia Inc. and filed on February 23, 1999 in the earlier reissue application serial no. 08/966,425 (a copy of which is attached hereto as **Exhibit B**). Applicant further submits a document, attached hereto as **Exhibit C**, which demonstrates that Mark F. Wachter has authority to act on behalf of current assignee Solutia Inc.

Applicant respectfully submits that this previously filed paper addresses the question of change in ownership from Monsanto Company to Solutia Inc. and satisfies the requirements of 37 C.F.R. 3.73. As such, Applicant respectfully requests that the Examiner's objection under 37 C.F.R. 1.172(a) be withdrawn.

Oath/Declaration:

The Examiner has rejected claims 90-104 as being based upon a defective oath/declaration under 35 U.S.C. 251.

A revised declaration was filed on February 19, 1999 as Exhibit J to the amendment in response to the August 19, 1998 Office Action in the merged reexamination/reissue proceeding of the earlier reissue application serial no. 08/966,425 and claims 90-104 in the present reissue application correspond to claims 120-134 in the prior merged reexamination/reissue application. A copy of the revised declaration is attached hereto as **Exhibit D**.

Applicant respectfully submits that the previously filed revised declaration meets the requirements of 37 C.F.R. 1.175(b)(1). As such, Applicant respectfully requests that this rejection under 35 U.S.C. 251 be withdrawn.

Rejection under 35 U.S.C. 112, 1st paragraph:

The Examiner has rejected claims 90 and 104 under 35 U.S.C. 112, 1st paragraph. Applicant respectfully requests the reconsideration and withdrawal of the rejection of claims 90 and 104 under 35 U.S.C. 112, first paragraph. The Examiner stated that the specification is allegedly enabling only for (A) a trialkyl phosphate in combination with either a dialkyl aryl phosphate, an alkyl diaryl phosphate or mixtures thereof or (B) a trialkyl phosphate in combination with a triaryl phosphate. The Examiner asserted that the specification allegedly does not reasonably provide enablement for any phosphate ester (claim 90) or a phosphate ester selected from the group consisting of triaryl phosphates, trialkyl phosphates, dialkylaryl phosphates, diarylalkyl phosphates and mixtures thereof (claim 104).

Applicant respectfully traverses the rejection. Initially, Applicant notes that the Examiner's limited characterization of the combinations of phosphate esters that can be used in the claimed invention, defined as "A" and "B" above, is incorrect. For example, Table 1 at col. 12 of the '551 patent shows examples of various ranges of trialkyl, dialkyl aryl, diaryl alkyl, and triaryl phosphate esters that can be used in the invention. Entry "V" of that table, in particular, shows a combination of all of these phosphate esters.

Thus, the claims of the patent cannot be arbitrarily limited as set out in the Office Action. In fact, based on what was known in the art at the time of the invention along with a reading of Applicant's specification in full, one of ordinary skill in the art would have been able to apply the teachings of the novel additive package of the invention to any combination of phosphate esters in a base stock composition.

As discussed above, claims 90-104 are directed to a part of Applicant's invention that was disclosed but not originally claimed in the application and issued patent, i.e., the use of the preferred additive package with any phosphate ester base stock composition. The key aspect of this part of the invention is the novel combination of additives used with the claimed phosphate ester base stock compositions. The specification clearly shows how to make and use the additive package with a phosphate ester base stock composition. For example, Tables 2 and 3, at Columns 14 and 15, describe two formulations of the novel combination of additives of the invention with previously known base stock compositions containing prior art base stocks comprised of tri-n-butyl phosphate and di-n-butylphenyl phosphate. In Table 7, at Column 24, formulation W-17 describes a combination of the novel additive package and previously known normal butyl phosphate ester base stocks. In Table 11, examples 1 and 2 also describe such a combination of novel additive package with previously known base stocks. Because of the statements in the specification cited in the Goetz declaration (e.g., Col. 6, lines 19-23, Col. 12, lines 34-35, and Table 1), those of ordinary skill in the art would be motivated to use the novel additive package disclosed by Applicant with other known phosphate ester base stock compositions.

Various phosphate esters were known in the art at the time of the invention to be useful as base stocks for functional fluids. The Okazaki et al. reference enclosed as Exhibit 1 to the Wolfe Declaration (submitted with the present application) provides a brief history of the use of phosphate esters as fire resistant base stock components and the designation of "Types" of fluids. In addition, the Synthetic Lubricants reference, a copy of which is attached hereto as **Exhibit E**, provides an extensive review of the properties of various phosphate esters, not limited to trialkyl or dialkyl aryl, and their use as base stocks for functional fluid compositions.

Applicant also notes that several of the patents cited by Applicant and of record in the prior merged reexamination/reissue proceeding, as well as by the Examiner in the Office Action dated January 24, 2002, represent prior art base stock formulations that would have been known by those of skill in the art. For example, the MacKinnon '067 patent, cited in the Office Action, discloses base stock formulations containing phosphate esters substituted with aryl or alkyl groups where "all three groups may be the same, or all three different, or two groups may be alike and the third different." (See, e.g., the '067 Patent, Col. 2, lines 56-61). Similarly, the Smith '587 patent, also cited in the Office Action, discloses functional fluid compositions containing phosphate esters substituted with alkyl or alkoxyalkyl groups, phenyl and substituted phenyl groups. Smith '587 also discloses "Base Fluids" in the examples, of which A, B, and E contain only dibutylphenyl phosphate as the base stock (see, Cols. 5 and 6). Applicant also provides additional examples of this art, U.S. Patent No. 2,894,911 (see attached **Exhibit F**), which discloses alkyl diaryl phosphate alone as the base stock, and U.S. Patent No. 2,903,428 (see attached **Exhibit G**), which discloses dialkyl phenyl phosphate alone as the base stock. Thus, the prior art of phosphate ester base stock compositions is not limited to what is disclosed in the present specification, nor more importantly, to the limited description asserted by the Examiner at pages 3-4 of the Office Action.

It is well settled that under 35 U.S.C. 112, first paragraph, an Applicant is allowed to build the description of his or her invention on what was previously known in the art. As the Supreme Court aptly noted in Webster Loom Co. v. Higgins et al., 105 U.S. 580, 586 (1881), the Applicant:

may begin at the point his invention begins, and describe what he has made that is new and what it replaced of the old. That which is common and well known is as if it were written out in the patent and delineated in the drawings.

See also, Hybritech Inc. v. Monoclonal Antibodies Inc., 231 U.S.P.Q. 81, 94 (Fed. Cir. 1986) ("a patent need not teach, and preferably omits, what is well known in the art").

Because of Applicant's disclosure of the unexpected beneficial properties of the novel additive package of the invention in combination with prior art base stocks, and the statements in the specification (col. 6, lines 15-23) that the use of the additive package

will “[enhance] the properties of base stock compositions previously known in the art”, those of ordinary skill would be motivated to combine the novel additive package with any of the various prior art phosphate ester base stock compositions. The specification’s clear indication that such is within the scope of Applicant’s invention is sufficient to enable the combination of the novel additive package with any of the various fire resistant phosphate esters known in the art.

Applicant respectfully submits that the above remarks on the 35 U.S.C. 112, 1st paragraph rejection also apply to new claims 105 and 106.

Applicant therefore maintains that the invention of claims 90-106 is adequately described and enabled as required under 35 U.S.C. 112, first paragraph, and respectfully requests reconsideration and withdrawal of the rejection.

Recapture Rejection under 35 U.S.C. 251:

Applicant respectfully requests the reconsideration and withdrawal of the rejection of claims 90-104 under 35 U.S.C. 251 for allegedly being improperly broadened in the reissue application (Office Action dated January 24, 2002, pp. 4-5). The Examiner stated that “[a]pplicant originally claimed a trialkyl phosphate in which the alkyl substituents are substantially C₄ or C₅. Applicant then filed an amendment that limited the trialkyl phosphate to an isoalkyl C₄ or C₅ that is bonded to the phosphate moiety via a primary carbon atom (see Applicant’s amendment filed 6-30-94), to overcome the prior art of record.” The Examiner stated that it appears that Applicant is allegedly attempting to recapture subject matter which was surrendered during prosecution in 08/099,267 (“the ‘267 application”) in order to obtain a patent, noting the amendments made to the claims on June 30, 1994 in response to the Office Action of March 8, 1994.

Applicant respectfully traverses this rejection and maintains that claims 90-104 (“the reissue claims”) are not added in an attempt to recapture subject matter that was surrendered in the ‘267 application but represent an invention that was disclosed but, mistakenly, not claimed in the original application. As explained in the Declarations of Gerbrand Deetman and Wendell Brooks, dated November 4, 1997 and November 7,

1997, respectively, which are included in the instant application papers, that failure to claim occurred without deceptive intent.

The Examiner cited In re Clement, 45 U.S.P.Q. 2d 1161 (Fed. Cir. 1997), in support of this rejection. As the court explained in Clement, the "recapture rule" exists to prevent "a patentee from regaining through reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims." 45 U.S.P.Q. 2d at 1164. The rule requires that the claims be analyzed first to determine if they are broader in any material aspect and, if so, to determine if the broader aspect relates to surrendered subject matter. Id. The court recognized, however, that situations may exist where the reissue claims may be broader in some aspects and narrower in other aspects when compared to the prior claims. 45 U.S.P.Q. 2d at 1165. In such instances, the court explained, the claims must be analyzed to determine whether both the narrower and broader aspects of the claim are relevant to prior art rejections to determine whether the claims violate the recapture rule, focusing on whether the patentee was "attempting to recapture surrendered subject matter." Id. The court then outlined a test, which is reproduced in the M.P.E.P. at §1412.02. That section of the M.P.E.P. further instructs that "if the narrowing limitation has a material aspect to it, then there is no recapture."

Because of the facts in this application, however, the test outlined in Clement and reproduced in the M.P.E.P. does not complete the analysis. As the C.C.P.A. noted in In re Richman, 161 U.S.P.Q. 359 (C.C.P.A. 1969) attention must also be directed to the original claims and the amendments made during the prosecution of the patent to determine whether those amendments were necessary to secure allowance over the prior art. 161 U.S.P.Q. at 363. As the court in Richman reasoned,

certainly one might err without deceptive intention in adding a particular limitation where a less specific limitation regarding the same features or an added limitation relative to another element, would have been sufficient to render the claims patentable over the prior art.

Id. The court stated that the recapture rule did not prevent an Applicant from broadening a limitation added to a claim in obtaining its allowance, "if the limitation turns out to be more restrictive than the prior art required." Id.

Applicant maintains that the reissue claims (claims 90-104) require analysis under both tests. The content of the phosphate ester base stock and the combination of additives were both directly relevant to the rejections overcome in the prosecution of the '551 patent. As noted by the Examiner, in relation to all of the issued claims, the reissue claims are broader with respect to the definition of the phosphate ester base stock. However, it is clear that the reissue claims are narrower than independent claims 1, 19, 31, 50, 56, and 67 of the '551 patent and the claims dependent thereon with respect to the definition of the additive package, which is a material aspect. Therefore, the recapture rule, as outlined in Clement and explained in M.P.E.P. 1412.02, does not bar the reissue claims with respect to independent claims 1, 19, 31, 50, 56, and 67.

Applicant acknowledges that in relation to the remaining independent claims 7, 8, 11 and 78 of the '551 patent, the claims in the instant application are not narrower with respect to the additive package. Yet, this does not automatically bar claims 90-104 under the recapture rule because, under the test in Richman, the broadening with respect to the base stock in the reissue claims is not recapture of surrendered subject matter. As explained more fully below, the limitation added to claims 7, 8, 11, and 78 defining the base stock as substantially C₄ or C₅ isoalkyl phosphate esters was not necessary to distinguish these claims over the art.

The claims that issued in the subject patent are all directed to fluid compositions that contain mixtures of phosphate esters, namely trialkyl-, alkyl diaryl-, dialkyl aryl-, and triaryl-phosphate esters, as base stock for the compositions. In particular, the alkyl substituents in these phosphate esters were specified as being substantially C₄ or C₅ isoalkyl substituents that are bonded to the phosphate moiety through a primary carbon. The '551 patent discloses this aspect as one of the features of the invention. (See, for example, Col. 12, line 7, through Col. 13, line 21). As Applicant noted in the present reissue application papers, the new claims are directed to subject matter that was disclosed in the application but, mistakenly, not claimed and not surrendered during prosecution of the original patent.

Only two office actions were issued during the prosecution of the subject patent, an Office Action dated January 29, 1993 in parent application serial no. 07/897,189, and

an Office Action dated March 8, 1994 in continuation-in-part application serial no.08/099,267. In each office action, the claims were rejected as anticipated under 35 U.S.C. 102 or obvious under 35 U.S.C. 103 in view of various combinations of the following patents: MacKinnon, U.S. Patent No. 4,206,067; MacKinnon, U.S. Patent No. 4,324,674; MacKinnon, U.S. Patent No. 5,035,824; Farnig et al., U.S. Patent No. 5,037,567; Chesluk et al., U.S. Patent No. 3,931,022; and Ryan et al. 4,868,023. The rejections pointed not only to the phosphate ester base stock components disclosed in these references but also to the additives disclosed.

As a response to the Office Action dated January 29, 1993, Applicant chose to refile the application on July 28, 1993 as a continuation-in-part and included a Preliminary Amendment which clarified some specification and claim language from the original application, added new claims and added additional experimental data to the specification. The next office action was issued March 8, 1994 as the first action in the continuation-in-part application. The Office Action dated March 8, 1994 did not repeat all of the rejections from the Office Action dated January 29, 1993 but it did contain the same substantive rejections over the art based on both the phosphate ester base stock components and the additives disclosed in the art.

In response to the Office Action dated March 8, 1994, Applicant filed an Amendment on June 28, 1994 which cancelled some claims and amended the remaining claims to limit the phosphate ester base stock component of the claimed fluid compositions to the preferred embodiment, namely those phosphate esters that contained substantially C₄ or C₅ isoalkyl substituents. Applicant also emphasized that the references cited did not teach or suggest the use of substantially C₄ or C₅ isoalkyl substituents on phosphate ester base stocks and therefore the invention claimed was not anticipated nor rendered *prima facie* obvious by the references. (See, for example, Amendment dated June 28, 1994, pages 27-30). No further Office Actions were issued and no further amendments were made prior to the issuance of the '551 patent.

Importantly, although the combination of additives used in the claimed functional fluid composition was pertinent to the rejections over the art, Applicant did not properly argue the patentability of the claims based on the combination of the novel additive

package with originally claimed base stocks. As discussed below in response to the 35 U.S.C. 103 rejections, the combination of additives in Applicant's novel additive package is not suggested or obvious in view of the art of record in the prior prosecution or of record in this reissue application Office Action. Thus, although claims 7, 8, 11, and 78 were patentable over the art without the limitation of substantially C₄ or C₅ isoalkyl phosphate ester base stocks, Applicant mistakenly chose to amend the claims to recite this limitation. Applicant did not concede the subject matter of reissue claims 90-104 during prosecution because the amendments made to claims 7, 8, 11, and 78 to recite substantially C₄ or C₅ isoalkyl base stock material were more restrictive than was necessary to overcome the cited art. It is clear that prior to this amendment, these claims were distinguishable over the cited art based on the additive composition that was neither taught nor suggested by the art. Similarly, reissue claims 90-104 are not anticipated or rendered obvious by the art of record because they also recite the novel additive package while more broadly reciting Applicant's mistakenly unclaimed inventive compositions comprising the novel additive package in combination with all known fire resistant phosphate ester base stock compositions. Therefore, the recapture rule as further defined in Richman does not bar reissue claims 90-104 with respect to claims 7, 8, 11, and 78.

Applicant respectfully submits that the above remarks on the 35 U.S.C. 251 rejection also apply to new claims 105 and 106.

Accordingly, Applicant respectfully requests examination of claims 90-106 and, for the reasons given, respectfully requests reconsideration and withdrawal of the rejection of claims 90 and 104 under 35 U.S.C. 251.

Rejections under 35 U.S.C. 103:

The Examiner has made two separate 35 U.S.C. 103 rejections of claims 90-104, which Applicant addresses individually below. Applicant maintains that when claims 90-104 are analyzed, their patentable aspects are easily distinguished over all of the art of record in this proceeding. Claims 90-104 are directed to functional fluid compositions

containing a combination of Applicant's novel and unobvious additive package with fire resistant phosphate ester base stocks.

Independent claim 90 provides a fluid composition suitable for use as an aircraft hydraulic fluid comprising (a) a fire resistant phosphate ester base stock; (b) a viscosity index improver in a proportion of between about 3% and about 10% by weight of the fluid composition, the viscosity index improver comprising a methacrylate ester polymer, the repeating units of which substantially comprise butyl and hexyl methacrylate, at least 95% by weight of the polymer having a molecular weight of between about 50,000 and about 1,500,000; (c) an anti-erosion agent in a proportion of between about 0.02% and about 0.08% by weight of the fluid composition, the anti-erosion agent comprising an alkali metal salt of a perfluoroalkyl sulfonic acid, the alkyl substituent of which is selected from the group consisting of hexyl, heptyl, octyl, nonyl, decyl, and mixtures thereof; (d) an acid scavenger in a proportion of between about 1.5% and about 10% by weight of the fluid composition the acid scavenger comprising an epoxide compound; (e) a 2,4,6-trialkylphenol in a proportion of between about 0.1% and about 1.0% by weight of the fluid composition; (f) a di(alkylphenyl)amine in a proportion of between about 0.3% and about 1.0% by weight of the fluid composition; and (g) a hindered polyphenol selected from the group consisting of bis(3,5-dialkyl-4-hydroxyaryl)methane, 1,3,5-trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxyaryl)benzene and mixtures thereof in a proportion of between about 0.3% and about 1.0% by weight of the fluid composition.

Independent claim 104 provides a fluid composition suitable for use as an aircraft hydraulic fluid comprising (a) a fire resistant phosphate ester base stock comprising a phosphate ester selected from the group consisting of triaryl phosphates, trialkyl phosphates, dialkylaryl phosphates, diarylalkyl phosphates and mixtures thereof; (b) a viscosity index improver in a proportion of between about 3% and about 10% by weight of the fluid composition, the viscosity index improver comprising a methacrylate ester polymer, the repeating units of which substantially comprise butyl and hexyl methacrylate, at least 95% by weight of the polymer having a molecular weight of between about 50,000 and about 1,500,000; (c) an anti-erosion agent in a proportion of between about 0.02% and about 0.08% by weight of the fluid composition, the anti-

erosion agent comprising an alkali metal salt of a perfluoroalkyl sulfonic acid, the alkyl substituent of which is selected from the group consisting of hexyl, heptyl, octyl, nonyl, decyl, and mixtures thereof; (d) an acid scavenger in a proportion of between about 1.5% and about 10% by weight of the fluid composition the acid scavenger comprising an epoxide compound; (e) a 2,4,6-trialkylphenol in a proportion of between about 0.1% and about 1.0% by weight of the fluid composition; (f) a di(alkylphenyl)amine in a proportion of between about 0.3% and about 1.0% by weight of the fluid composition; and (g) a hindered polyphenol selected from the group consisting of bis(3,5-dialkyl-4-hydroxyaryl)methane, 1,3,5-trimethyl-2,4,6-tris(3,5-di-tert-butyl-4-hydroxyaryl)benzene and mixtures thereof in a proportion of between about 0.3% and about 1.0% by weight of the fluid composition.

Claims 105 and 106 correspond to claims 90 and 104, respectively, wherein the viscosity index improver and the anti-erosion agent components of the additive package are defined as follows: (b) a viscosity index improver in a proportion of between about 3% and about 10% by weight of the fluid composition, the viscosity index improver comprising a poly(alkyl methacrylate) polymer ester, and the alkyl substituent comprises from 1 to 24 carbon atoms, and (c) an anti-erosion agent in a proportion of between about 0.02% and about 0.08% by weight of the fluid composition, the anti-erosion agent comprising an alkali metal salt of a perfluoroalkyl sulfonic acid, wherein the alkyl substituent comprises from 5 to 12 carbon atoms.

Applicant maintains that the Examiner has not established a *prima facie* case of obviousness under either 35 U.S.C. 103 rejection for any of claims 90-104. With regard to claims 90-104, it is clear that none of the cited references, nor any of the other references of record in this proceeding, disclose or suggest the unique and novel additive package of Applicant's invention. Thus, any attempted combination of the references to formulate a rejection can only be the result of picking and choosing various components from these references based, impermissibly, on Applicant's teaching. When prior art references require a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. Something in the prior art as a whole must suggest the desirability, and

thus the obviousness, of making the combination. It is impermissible to use the claims as a frame and the prior art references as a mosaic to piece together a facsimile of the claimed invention. Applicant respectfully submits that the none of the cited references provide the required motivation to combine the references as suggested by the Examiner. As such, the basis of the Examiner's rejections are respectfully submitted to be a case of improper hindsight analysis.

The Examiner has rejected claims 90-104 under 35 U.S.C. 103(a) as being unpatentable over MacKinnon (U.S. 4,206,067) in view of Smith (U.S. 3,679,587) and further in view of Great Britain (GB 1,370,728) and French (FR 2,120,127). Applicant respectfully traverses this rejection.

MacKinnon '067 discloses a phosphate ester-based functional fluid that is required to contain a perhalometalloidic salt and an organic base. The functional fluid of MacKinnon preferably contains an oxidation inhibitor, particularly a hindered phenol, i.e. di-t-butylparacresol. The examples utilize a mixture of 0.5 wt. % dibutyl paracresol and 0.5 wt. % di(octylphenyl)amine. MacKinnon does not disclose or suggest using a hindered polyphenol, nor does MacKinnon disclose or suggest using the antioxidant package of the three antioxidant compound types required in claims 90-104. MacKinnon teaches that the perhalometalloidic salt and organic base having a boiling point greater 180°C are required components. There is no motivation to substitute Applicant's perfluoroalkyl sulfonate anti-erosion agent, e.g., "FC-98", for the perhalometalloidic salt of MacKinnon nor is there any motivation to omit MacKinnon's required organic base. FC-98 is a mixture of perfluoroalkyl sulfonates, in particular, a potassium salt of perfluoroethyl cyclohexyl sulfonate, a potassium salt of perfluoromethyl cyclohexyl sulfonate, a potassium salt of perfluorodimethyl cyclohexyl sulfonate, and a potassium salt of perfluorocyclohexyl sulfonate.

Smith discloses phosphate ester-based functional fluids containing an alkali metal salt of perfluoroalkyl sulfonic acids as an anti-erosion agent.

→ There is no motivation to substitute the perfluoroalkyl sulfonic acid salt of Smith for the perhalometalloidic acid salt of MacKinnon. In general, perfluoroalkyl sulfonic acid salts are not perhalometalloidic acid salts. Alkali metal salts of perfluoroalkyl

sulfonic acids as anti-erosion agents in phosphate ester based functional fluids were known before MacKinnon (as seen by the earlier disclosure in Smith); it was not a later discovered substitute.

Further, contrary to the Examiner's assertions, perhaloalkyl sulfonic acid salts were not disclosed in MacKinnon to be an "equivalent" of MacKinnon's preferred perhalometalloidic acid salts. The clear teaching in MacKinnon is away from the use of such anti-erosion additives, in favor of his preferred additive which is used in conjunction with the required organic base. There is no motivation to combine the MacKinnon and Smith references, and therefore the Examiner's substitution of perfluoroalkyl sulfonic acid salts for perhalometalloidic acid salts has been made by the impermissible use of Applicant's specification, which discloses the superiority of perfluoroalkyl sulfonic acid salts as part of the additive package of the invention.

GB '728 discloses an oxidation-inhibited phosphate ester-based functional fluid that requires a two-component antioxidant combination of a hydrogen phosphate ester and a hindered diphenol. GB '728 does not disclose or suggest using the antioxidant package of the three antioxidant compound types which are required in claims 90-104.

FR '127 discloses fluid compositions, particularly steam turbine lubricants, combining a triaryl phosphate with a sterically hindered diphenol with a central methylene group, e.g. 4,4'-methylene bis(2,6-di-t-butylphenol). FR '127 does not disclose or suggest using a mixed antioxidant. However, FR '127 discloses that arylamine antioxidants are ineffective as antioxidants with triaryl phosphates. Therefore, nothing in FR '127 discloses or suggests using the sterically hindered diphenol with an arylamine. In fact, FR '127 teaches away from using the sterically hindered diphenol with an arylamine.

The Examiner states that "it would have been obvious to one of ordinary skill in the art to employ the hindered polyphenol of either GB '728 or FR '127 as the hindered phenol oxidation inhibitor of MacKinnon...". Even if one were to use the hindered polyphenol of GB '728 or FR '127 as a replacement for the hindered phenol of MacKinnon as the Examiner suggests, this still would not teach one of ordinary skill in the art to use the antioxidant package of the three antioxidant compound types required in

claims 90-104. There is no motivation in MacKinnon, or in GB '728 or FR '127 to utilize the antioxidant package of the three antioxidant compound types required in claims 90-104. Furthermore, nothing in GB '728, FR '127 or MacKinnon motivates one of ordinary skill in the art to add a hindered polyphenol of GB '728 or FR '127 to the hindered phenol and arylamine of MacKinnon without hindsight gleaned from the claimed invention. This is impermissible hindsight reconstruction.

With regard to claims 90-104, Applicant maintains that none of the claims are rendered obvious over any combination of these references since none disclose the particular combination of additives that makes up the novel additive package. As an illustrative example, the combination of antioxidants recited in these claims are not disclosed or suggested by the cited references. None of the references teach or suggest the need for the claimed combination of antioxidants. Further, there is no motivation to combine the teachings of these references as attempted by the Examiner, and, more importantly, no motivation to disregard the other teachings in the references that the Examiner omits, e.g., the necessity of the hydrogen phosphate ester in GB '728 or the combination of perhalometalloidic acid salt and organic base in MacKinnon. Applicant's claimed combination of antioxidants only appears obvious from the references when viewed, impermissibly, in light of Applicant's disclosure of the combination of additives.

Applicant respectfully submits that the above remarks on the 35 U.S.C. 103(a) rejection over MacKinnon, in view of Smith and further in view of GB '728 and FR '127 also apply to new claims 105 and 106, i.e. claims 105 and 106 are not obvious over MacKinnon, in view of Smith and further in view of GB '728 and FR '127.

Accordingly, Applicant respectfully requests the reconsideration and withdrawal of the rejection of claims 90-104 under 35 U.S.C. 103(a) over MacKinnon, in view of Smith and further in view of GB '728 and FR '127.

The Examiner has rejected claims 90-104 under 35 U.S.C. 103(a) as being unpatentable over Skydrol® LD-4, in view of MacKinnon (U.S. 4,206,067), and further in view of Great Britain (GB 1,370,728) and French (FR 2,120,127). Applicant respectfully traverses this rejection.

Applicant repeats the arguments from above regarding the disclosures of MacKinnon, GB '728, and FR '127.

Skydrol® LD-4 is a hydraulic fluid disclosed in the '551 patent that contains 50-60% tributyl phosphate, 30-35% dibutyl phenyl phosphate, 5-10% viscosity index improver (HF411), 0.005-1.0% anti-erosion agent (FC-98), 4-8% epoxide acid scavenger (MCS 1562), 1.0% 2,6-di-t-butyl-p-cresol, and 0.13-1.0% copper corrosion inhibitor (FH-132). Skydrol® LD-4 does not contain an amine antioxidant nor does it contain a hindered polyphenol antioxidant.

For at least the same reasons as specified above, there is no motivation to combine the teaching of Skydrol® LD-4 with MacKinnon, GB '728 or FR '127. None of the references, alone or in combination, disclose or suggest the preferred combination of additives recited in claims 90-104. As noted above, there is no motivation to combine the teachings of these references as attempted by the Examiner, and, more importantly, no motivation to disregard the other teachings in the references that the Examiner omits. Any attempt by the Examiner to assert that Applicant's claimed combination of antioxidants is obvious over the combination of references is improper because the only basis for such a combination lies in Applicant's disclosure of the combination of additives, and use of Applicant's disclosure in this manner is impermissible.

Applicant respectfully submits that the above remarks on the 35 U.S.C. 103(a) rejection over Skydrol® LD-4, in view of MacKinnon, and further in view of GB '728 and FR '127 also apply to new claims 105 and 106, i.e. claims 105 and 106 are not obvious over Skydrol® LD-4, in view of MacKinnon, and further in view of GB '728 and FR '127.

Accordingly, Applicant respectfully requests the reconsideration and withdrawal of the rejection of claims 90-104 under 35 U.S.C. 103(a) over Skydrol® LD-4, in view of MacKinnon, and further in view of GB '728 and FR '127.

Additional Evidence of Nonobviousness:

Applicant maintains that the above discussion clearly distinguishes the claimed invention from the prior art. None of the references teaches or suggests Applicant's

novel additive package as it is defined in claims 90-106. In addition, there is no motivation to combine the references in the selective manner suggested by the Examiner absent the improper use of hindsight. Thus, all of these claims are non-obvious over the cited references. Applicant respectfully submits that no additional evidence of non-obviousness is necessary.

The Examiner's comments at pages 9-10 of the Office Action regarding the experimental results are an improper attempt to limit the claims to the specific examples in the specification and the first declaration of Dr. Terry C. Wolfe. Applicant has argued that the tests demonstrate that the claimed invention is unexpectedly superior to prior art compositions, based on the use of Applicant's novel additive package. However, because a *prima facie* case of obviousness under 35 U.S.C. 103 has not been made, the examples showing the effectiveness of various formulations of the claimed invention cannot be used to limit Applicant's claimed invention. Applicant is entitled to the full scope of its claimed invention regardless of the number of examples which show the properties of the fluid compositions.

With regard to the data in the specification of the '551 patent, Applicant respectfully submits that data in addition to that referenced by the Examiner demonstrates the improvement in fluid stability achieved using the additive package of claims 90-106.

In Example 12, Table 11 of the '551 patent, comparing samples 1 and 2 with Skydrol® LD-4 (each having a tri(n-butyl) phosphate-based base stock) demonstrates that the additive package of the claimed invention has substantially improved thermal stability compared to the prior art additive package of Skydrol® LD-4 (677 and 420 v. ~300, hr @ 325°F). In Example 13, Table 12 of the '551 patent, comparing sample 2 with Skydrol® LD-4 and Hyjet® IVA (each having a tri(n-butyl) phosphate-based base stock) demonstrates that the additive package of the claimed invention has substantially improved hydrolytic stability compared to the prior art additive packages of Skydrol® LD-4 and Hyjet® IVA (450 v. 300 and 200, hr @ 325°F, <0.2% water; 85 v. 37 and 28, hr @ 325°F, 0.5% water). Applicant respectfully submits that the data in the '551 patent and the first Wolfe declaration fully support the scope of the invention as claimed in claims 90-104.

Nonetheless, in an effort to move the present application to allowance, further evidence of the non-obviousness of the claimed invention is presented summarizing additional testing that was conducted, at considerable time and expense to Applicant's assignee, to demonstrate the improved stability achieved with the claimed additive package.

Applicant encloses a Second Declaration of Dr. Terry C. Wolfe which was originally submitted with the February 19, 1999 amendment in the merged reexamination/reissue proceeding describing the tests conducted and the results obtained (see **Exhibit H** attached hereto). In short, the second of two tests was conducted to further demonstrate the unexpected advantages provided by Applicant's novel additive package.

The second experiment, which relates to claims 90-106, compared two fluids that both contained the same normal alkyl substituted phosphate ester base stock composition, but differed in that one formulation contained Applicant's claimed novel additive package combination and the other contained a combination of prior art additives representative of a "Type IV" additive package. As discussed in the declaration, the results show that the fluid containing Applicant's novel additive package combination provided significantly improved thermal stability when compared to the fluid containing the Type IV additive package. In addition to the fact that none of the cited references teach or suggest the claimed additive package, this result is clearly unexpected and additional evidence of the non-obviousness of claims 90-106 directed to compositions containing the novel additive package.

Applicant maintains that this evidence confirms the results discussed in the specification and disclosed in the first Declaration of Dr. Wolfe that the novel additive package represents a significant advance in the art of phosphate ester based functional fluid compositions. Therefore, the pending claims, which are directed to this advantage, are patentable.

The Examiner has maintained that the data does not support the scope of the invention as claimed, and cited In re Clemens, 206 U.S.P.Q. 289, 296 (CCPA 1980) for the proposition that "objective evidence of non-obviousness must be commensurate in

scope with the claims which the evidence is offered to support.” However, further reading of the court’s analysis of the facts in In re Clemens which is based on the narrow temperature of the comparative testing finds that the court stated: “[t]his is not the case in which the probative value of a narrow range of data can be reasonably extended to prove the unobviousness of a broader claimed range.” 206 U.S.P.Q. at 296. The court in In re Clemens went on to state, citing In re Kollman, 201 U.S.P.Q. 193, 199 (CCPA 1979), that the “unobviousness of a broader claimed range was proven by a narrower range of data, when one having ordinary skill in the art could ascertain a trend in the exemplified data which would allow him to reasonably extend the probative value thereof.” The testing in In re Clemens comparing two resins was determined to not support the entire claimed scope because the temperature used for the test was a temperature where one of the resins was expected to perform poorly. Applicant respectfully submits that the claimed invention fits the In re Kollman situation rather than the specific fact pattern of In re Clemens. The data presented in the present application clearly would enable one of ordinary skill in the art to ascertain a trend in the exemplified data which would allow him to reasonably extend the probative value of the data to the full scope of the phosphate ester base stocks claimed with the claimed additive package. Even though different phosphate ester base stocks may have different stability properties, based on the comparative data presented in the specification and the two Wolfe declarations, one of ordinary skill in the art would expect that the claimed additive package would produce improved overall fluid stability for the entire claimed scope of phosphate ester base stocks.

In summary, based on the above remarks, Applicant maintains that he is entitled to the full scope of the invention as presently claimed and therefore respectfully requests allowance of claims 90-106.

It is respectfully requested in accordance with the discussion above, that the rejections of the claims be reconsidered and claims 90-106, all of the claims in the application, be found allowable.